

## **REMARKS**

### **Status of the claims**

Claims 1-11, 19, 22, and 23 are rejected. Claims 1 and 2 have been amended to specify that the nucleic acid molecule is isolated or recombinant. Support for this amendment can be found, for example, on page 3, lines 5-7 of the specification. Claim 6 has been amended to specify that the host cell comprises the nucleic acid molecule of claim 1. Support for this amendment can be found, for example, on page 6, lines 24-26 of the specification. New claim 24 has been added. Support for this new claim can be found, for example, on pages 23-24 of the specification. No new matter has been added by way of these amendments. Claims 1-11, 19, and 22-24 are pending.

### **The Rejections Under 35 U.S.C. § 103(a) Should be Withdrawn**

Claims 1 and 4-7 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ben-Dov *et al.* (1996) *Appl. Environ. Microbiol.* 62:3140-3145 in view of Liu et al. (U.S. Patent 6,156,308) and further in view of Carlton *et al.* (1985) *Mol. Biol. Microb. Differ., Proc. Intl. Spore Conf.*, 9<sup>th</sup>, Meeting date 1984, pages 246-252, and further in view of deMaagd et al. (2001) *Trends Genet.* 17:193-199), and taken with the evidence of Applicants response to the Request for Information under 37 CFR 1.105. Claims 2-3, 8-11, 19, and 22-23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ben-Dov *et al.* in view of Liu et al. and further in view of Carlton *et al.* and deMaagd et al., and further in view of Koziel *et al.* (U.S. Patent 5,625,136). These rejections are respectfully traversed for the reasons of record, some of which will be reiterated herein.

The Examiner states that it would have been obvious to clone delta-endotoxin genes from strain HD536 using the methods described in Ben-Dov et al. and Liu et al. The Examiner states that one of ordinary skill would have sequenced the plasmid fragments, translate the resulting sequences to identify open reading frames, and identify delta-endotoxins by comparison to the Cry protein conserved sequence and structural domains taught by de Maagd et al. However,

neither Ben-Dov et al. nor Liu et al. teach such a method of identifying toxins from a *Bacillus* strain.

Liu et al. first profiled the strains by PCR analysis using probes specific to a series of known cry genes. Ben-Dov also used hybridization methods based on the sequence of known genes, and even then was unsuccessful in identifying anything other than very highly similar genes. This method requires the presence of sequences with a high degree of homology to the existing genes, at least in the region corresponding to the probe sequences. As discussed in the Appeal Brief filed on September 17, 2010, the gene claimed in the instant invention has low homology to the genes known at the time of filing. Thus, there would have been no reasonable expectation of success in identifying the axmi gene of the invention using the methods taught by Liu et al. or Ben-Dov et al.

Nonetheless, no genes were isolated or identified by Liu et al. using this method. Instead, Liu et al. tested protein isolates and partially sequenced two protein bands fractionated from these isolates. Thus, using these methods, one of skill in the art can only identify highly expressed sequences from these Bt strains, and further elucidation of toxin genes may be prevented by the “masking” of lower-expressed genes by the more highly expressed toxins in a particular strain. Thus, Liu et al. provide no direction or guidance for identifying the specific delta-endotoxin gene claimed in the instant invention. While methods for isolating toxin genes from strains having pesticidal activity were known in the art at the time of filing of the instant application, Applicants maintain that there would have been no reasonable expectation of success in identifying the specific genes claimed in the instant invention. In view of the foregoing remarks, Applicants maintain that there is no *prima facie* case of obviousness.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefor (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 50-2510.

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Respectfully submitted,

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